REFERENCE

DAY, F. (1878): The Fishes of India; being a natural history of the fishes known to inhabit the seas and freshwaters of India, Burma and Ceylon. Text and atlas in 4 parts. London, xx + 778 pp., 195 pls.

27. OCCURRENCE OF A SCHIZOTHORACINE FISH (SNOW TROUT) IN A SUBTERRANEAN CAVE NEAR UDAIPUR, RAJASTHAN

Schizothoracine fishes inhabit hillstreams and lakes in the Himalayan and sub-Himalayan region extending to China (Day 1958). Jayaram (1981) gives their distribution as Kashmir, Punjab, Afghanistan, Pakistan, Tibet and Nepal.

One individual of this subfamily (Schizothoracinae) was caught in a subterranean cave having its entrance about 50 feet below the surface in the hilly terrain of Aravalli ranges near Udaipur (lat. 24°-34′ N; long. 74°-40′ E). The cave which had never been explored in the past is said to have been formed by copper mining activities in ancient times (around 3-4 thousand years back). The cave is dark and appears fairly wide in its spread with interconnecting channels. These channels are unapproachable, being very dark and at places too low in height. At the time of capture of the fish in May, 1987, the cave's water had a temperature of *c.* 18°C.

The fish was seen swimming near the entrance of the cave. It was caught and identified as belonging to the subfamily Schizothoracinae. The species could not be ascertained with the help of available literature as several characters of two genera *Schizothorax* Heckel and *Diptychus* Steindachner overlapped in the specimen. The description of the fish is as follows:

Body elongate, subcylindrical, abdomen rounded. Head large, rounded anteriorly, snout obtuse, smooth. Mouth inferior, crescentic, lower lip with papillated margin forming a reduced sucker (character of the genus *Schizothorax*). Eyes large, 6.7 in head length, laterally placed, barely visible from the ventral side. Total length 23.6 cm., standard length 18.8 cm; depth 3.9 in standard length and 4.81 in total length. Head 4 in standard length and 5.02 in total length. Only two barbels visible, maxillary in position, minute, less than the diameter of the eye. Dorsal fin inserted almost half ahead of pelvic fin, beginning above the posterior tip of pectoral fin. Dorsal fin 1+9, pectoral fin 17, pelvic fin 9 with a fleshy appendage in the axil (character of *Diptychus*), anal fin 7. The tile row of scales over the anal fin not much developed. Caudal forked 12+12, lateral line curved anteriorly ending in the middle of caudal fin. Lateral line scales 64 (unlike *Schizothorax* and *Diptychus*).

The occurrence of a Schizothoracine fish in the region south of Aravalli hills in Rajasthan is intriguing. Presently, there is no river or seasonal stream in this region connecting the drainage of the sub-Himalayan region of Punjab and Jammu-Kashmir. Since the cave does not receive any surface drainage, the presence of a Schizothoracine fish in the cave could be a case of geographical isolation. It is almost certain (Merh, personal communication) that the rivers and streams of western Rajasthan (Luni, Jojari, Bundi and others) had Himalayan connections in former days. There could also be an underground drainage of the sub-Himalayan watershed connecting the streams and rivers of the region south of Aravalli ranges. Obviously, the water of this

drainage would be cold. Peculiar assemblage of different generic characters in the specimen studied could be the sequel of interbreeding and long isolation, thereby inducing speciation.

The water from the cave was pumped out for a few days by the mining department of Hindustan Zinc Ltd. for their use without our knowledge. It was then reported that several kilograms of fish were collected during this operation. This fish catch was allowed to be taken by the tribals residing nearby for their consumption. It is possible further specimens may not be available for confirmation of the above findings and further study. However, attempts are now being made to explore the cave further as it still contains water of shallow depth and thus may harbour ichthyologically interesting finds.

We are grateful to Prof. S. S. Merh, Dept. of Geology, M. S. University, Baroda for discussion.

[1] Dept. of Limnology and Fisheries,
Rajasthan Agricultural University,
Udaipur Campus,
Udaipur.
[2] 'SHIKRA' Ecological Restoration
Society,
41 Panchwati, Udaipur,
January 9, 1988.

RAZA TEHSIN[1]
V. S. DURVE[2]
MANOJ KULSHRESHTHA[1]

References

Day, F. (1958): The Fishes of India. William Dawson & Sons Ltd., London.

Jayaram, K. C. (1981): The freshwater fishes of India. A handbook. Zoological Survey of India, Calcutta.

28. MATING AND OVIPOSITION BEHAVIOUR OF TEA MOSQUITO BUG *HELOPELTIS ANTONII* SIGNORET (HETEROPTERA: MIRIDAE)[1]

Introduction

The tea mosquito bug *Helopeltis antonii* Signoret (Heteroptera: Miridae) is the most serious pest of cashew *Anacardium occidentale* L. in India. The adults and nymphs of the pest feed on the sap of tender shoots, panicles and immature fruits resulting in their drying up. Though the biology of the pest is known, details of its mating and oviposition behaviour are not well documented except for the brief reports of Ambika and Abraham (1979) and Jeevaratnam and Rajapakse (1981). The mating and oviposition behaviour of *H. antonii*, observed mainly under laboratory conditions, is reported in detail in this communication.

Material and Methods

To observe the various sequences of mating events, male and female adult bugs were in-

[1] Contribution number 441 of Central Plantation Crops Research Institute. Kasaragod-670 124, Kerala.